

17. Another carrier, American Communications Services, Inc. (ACSI), has built a three mile fiber optic network around downtown Tulsa, and expects to have 20 miles of network completed by the end of June 1997, with the entire \$7 million, 50 fiber mile project scheduled for completion by mid-1998. Tulsa World, 12/19/96. At the time of the article, ACSI was already providing business telecommunications services, and projecting that it would be providing local service in six months. ACSI was also advertising Tulsa as one of its serving areas and stating that, if it had not installed a switch in the city yet, subscribers should wait because ACSI will be “a whole new phone company - one worth waiting for!” Wheeler Schedule 2, at 29 & 30.

18. There are also two PCS networks being constructed in Tulsa by companies granted PCS licenses by the FCC. Sprint Spectrum and Southwestern Bell Mobile Systems have those licenses. Wheeler Schedule 2, at 16.

The information contained in this affidavit and in the attached Schedules is true and correct to the best of my knowledge and belief or reflects the statements or information provided by sources referenced.


GREGORY J. WHEELER

Subscribed and sworn to before me this 4th of April, 1997.

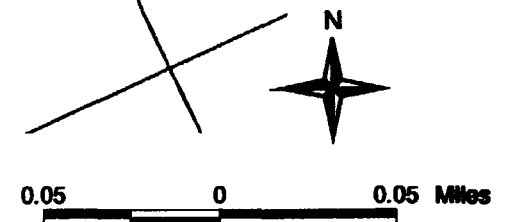
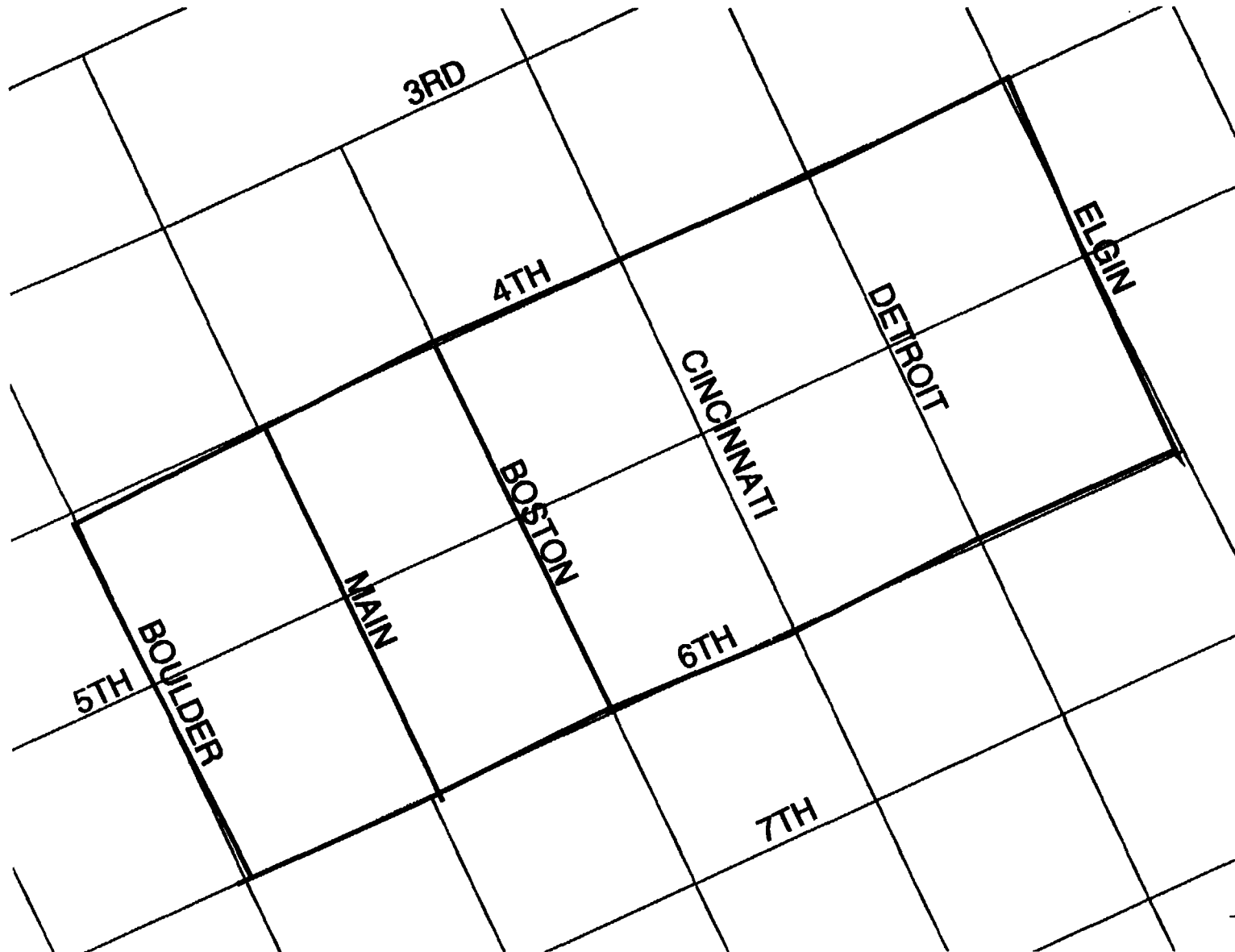

NOTARY PUBLIC

My commission expires:

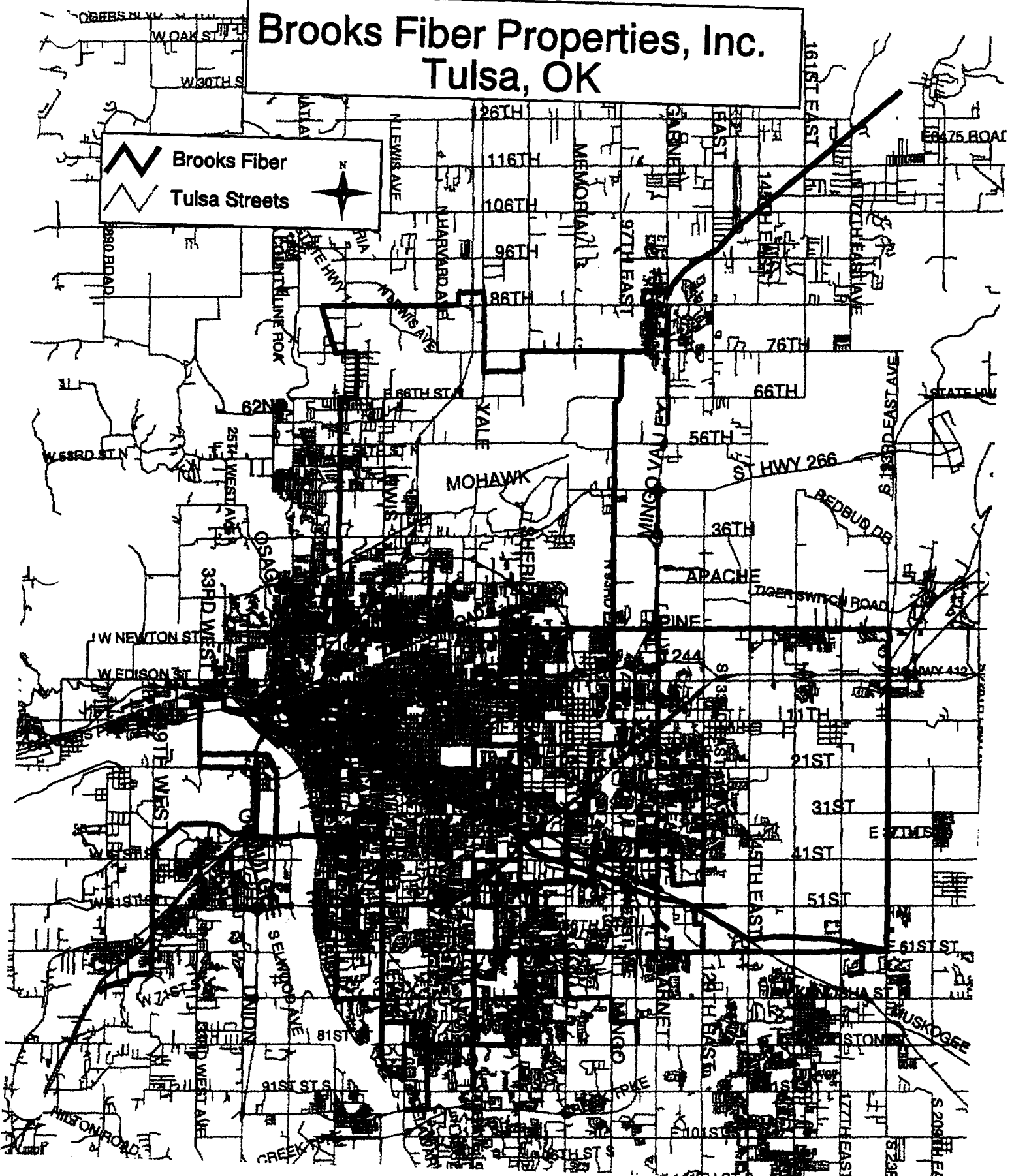
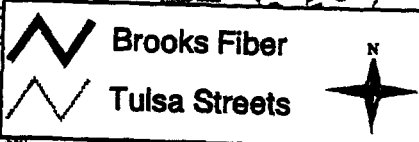
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WHEELER
SCHEDULE 1

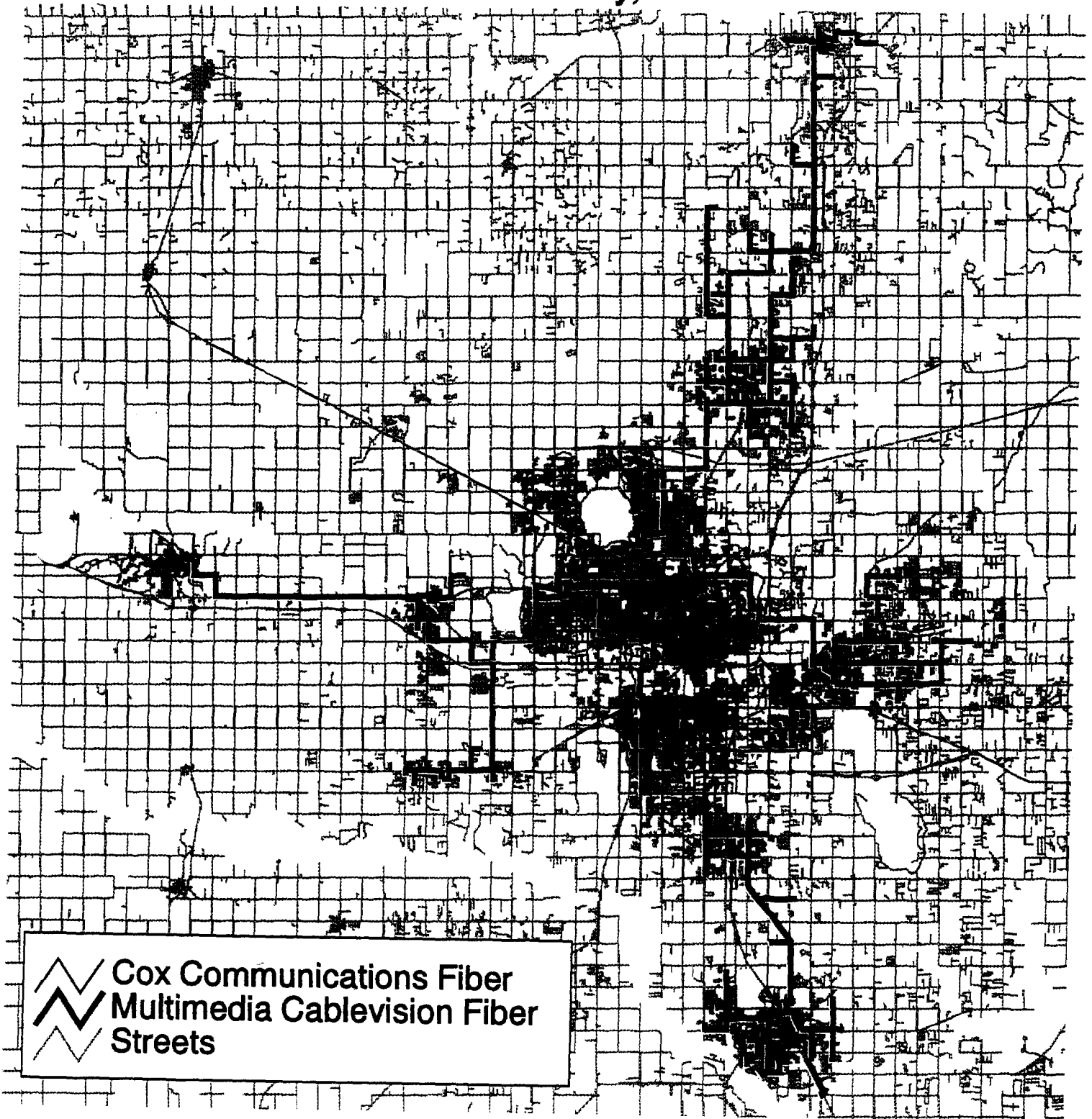
ACSI FIBER NETWORK TULSA, OK



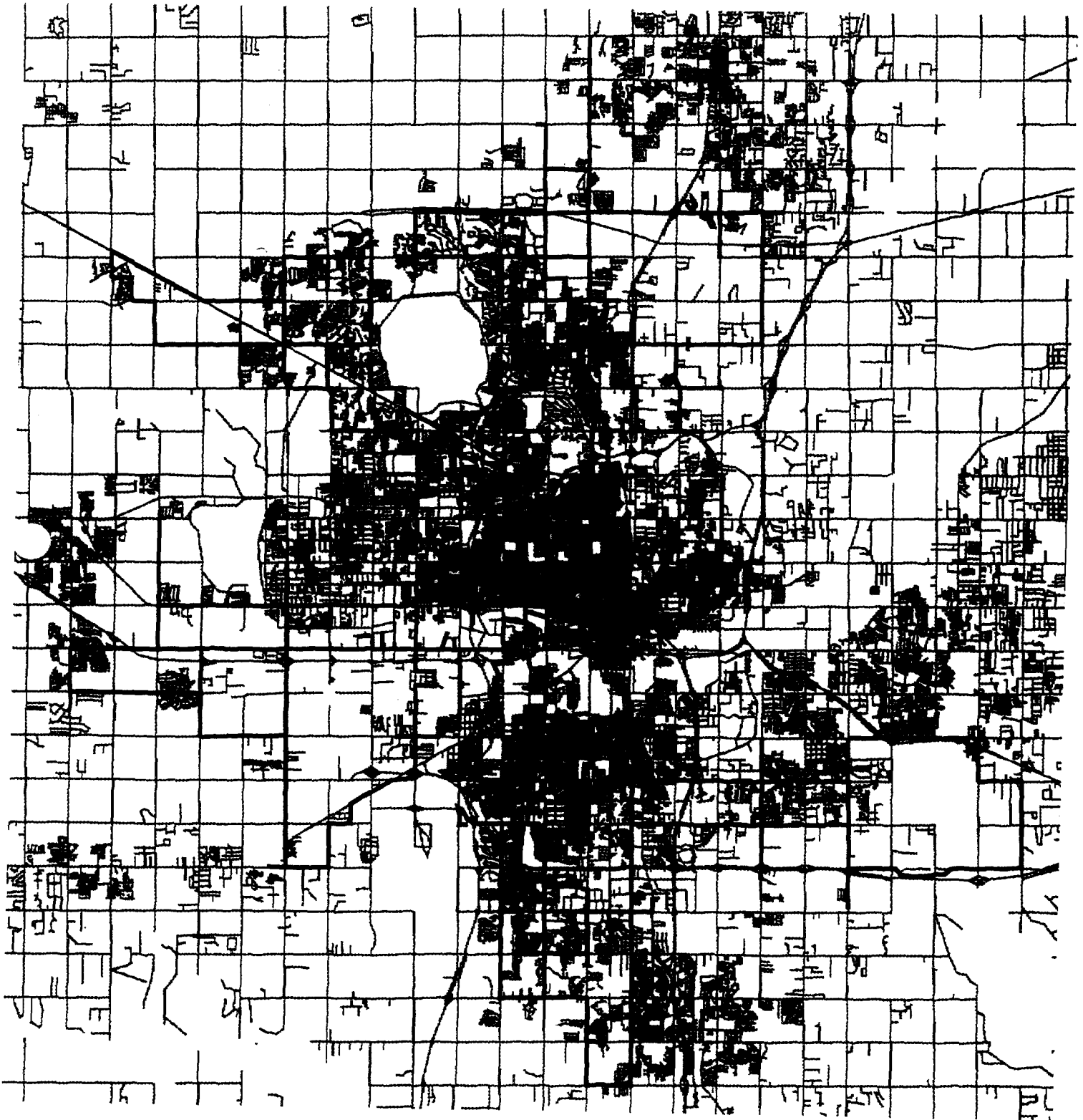
Brooks Fiber Properties, Inc. Tulsa, OK



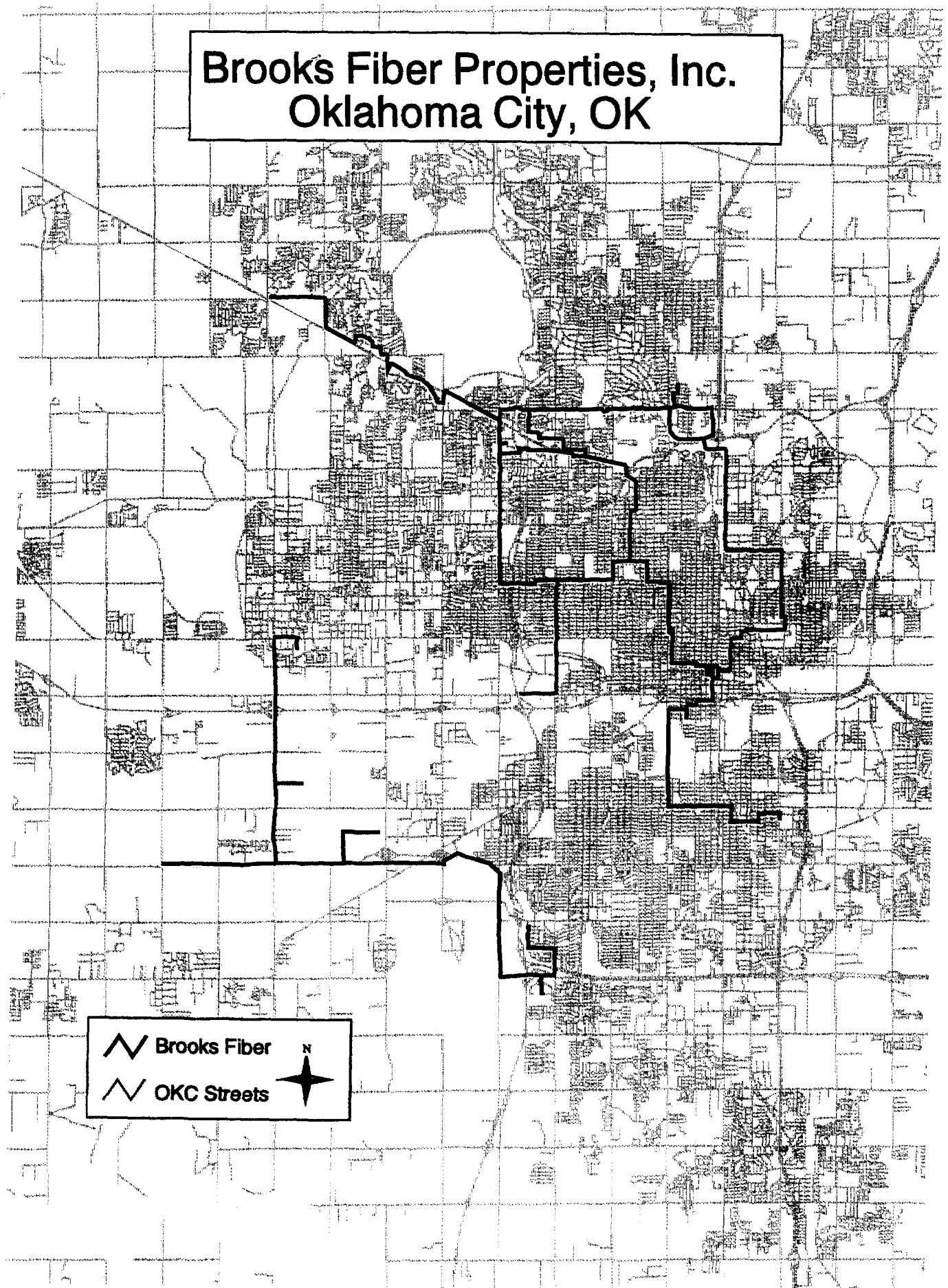
COX COMMUNICATIONS AND MULTIMEDIA CABLEVISION FIBER NETWORK Oklahoma City, OK



COX COMMUNICATIONS FIBER NETWORK Oklahoma City, OK



Brooks Fiber Properties, Inc. Oklahoma City, OK



WHEELER
SCHEDULE 2

News Media Report

THE SUNDAY OKLAHOMAN

Oklahoma City

Business

Firm to Activate Fiber Optic Net Serving Downtown

By Jon Denton
Staff Writer

Operators of Brooks Fiber Communications of Oklahoma Inc. will officially flip the switch Thursday on the first of three fiber optic "rings of architecture" in the Oklahoma City metro area.

Chris Hugman, general manager of the company's Oklahoma City office, said corporate developer John Shapleigh of St. Louis-based Brooks Fiber Properties will join state and city officials for the system's launch.

The venture serves companies and agencies that need high-quality business telecommunications, Hugman said. Brooks' first-stage development links several office buildings in a three-mile downtown loop of fiber optic cable.

Thursday's launching is set for 10 a.m. at the company's Oklahoma City control center, 101 Park Ave. Administrative offices are at 210 Park Ave.

Fiber optic technology sends light beams carrying digital transmissions over glass or plastic fibers the size of a human hair. Digital transmission over fiber optics is considered cheaper, more clear and more secure than transmission over standard metal wires, proponents say.

The service links long-distance companies, business customers and other communication services. Customers typically include banks, universities, reservation centers, catalog companies, telemarketing businesses and military installations.

"Our competition will be our customers and our suppliers in some cases," Hugman said. "We expect to compete with them on a wide-scale basis, but we're doing this a step at a time."

Southwestern Bell Telephone and Cox Fibernet are other competitive access providers of fiber optics in Oklahoma City.

Brooks' first downtown loop will be followed by Capitol and airport loops, Hugman said. Within 18 months, the system will link 88 miles of glass fiber in redundant, or



— Staff Photo by Roger Klock

Chris Hugman, general manager of the Oklahoma City office of Brooks Fiber Communications, examines a conduit of fiber optic cables like those typically used in the metropolitan area.

backup loops designed to withstand a disaster, he said.

Within 10 years, Hugman said, Brooks will invest \$20 million in the area and offer a full-service program.

Hugman calls the second Oklahoma City phase, a 25-mile extension, the North Capitol Loop. It will start downtown, move northeast to the State Capitol and Health Sciences Center, head west on NW 63 to Portland, then circle south on Classen to downtown.

The third phase, or South Airport Loop, will cover 60 miles. It will swing south to Will Rogers World Airport, east to Tinker Air Force Base, then back downtown. Each

loop will serve customers along the route as well as destination points, Hugman said.

The company has other Oklahoma investments. On Thursday, Brooks completed the purchase of a 105-mile fiber optic company, PSO-MetroLink. It covers the Tulsa business district, Catoosa and Owasso.

Public Service Company of Oklahoma sold the utility for an undisclosed price, Hugman said. Brooks will spend about \$3 million in the next year to update Tulsa-area technology.

Another investment will expand the service to Broken Arrow, also within a year, Hugman said.

WHEELER SCHEDULE 2

2 of 32

TITLE: Downtown Fiber Optic Network Unveiling Set
BYLINE: Bill May
EST. PAGES: 2
DATE: 03/16/95
DOCID: JR560357
SOURCE: The Journal Record; JR
SECTION: NEWS
(Copyright 1995)

Oklahoma City businesses now have another on-ramp to the information superhighway.

That ramp will be fully operational when Brooks Fiber Communications of Oklahoma Inc., subsidiary of Brooks Fiber Properties of St. Louis, flips the switch next week on the fiber optic network for downtown Oklahoma City.

State and city political and economic development officials have been invited to the ceremony when the switch is turned on, said General Manager Christopher Hugman.

That ceremony is scheduled for 10 a.m. Thursday in the company's switching hub, on the concourse level of 101 Park Ave.

Administrative offices are in the Oklahoma Tower, 210 Park Ave.

The company has 15 full-time employees, and engineering and installation contractors have another 15 employees, Hugman said. That figure is expected to rise as contractors bring in more employees to extend the company's network through Oklahoma City.

By the end of the year, the company expects to have nearly 50 miles of fiber cable installed for a network covering most of the dense business districts, Hugman said.

"We now have three miles of cable installed in the downtown area, and we're scheduled to install 25 more miles this year," he said. "But I personally feel that we'll be pushing 50 miles of cable installed by the end of the year _ if not by the end of 1995, then certainly by early 1996."

This makes the second company that has announced it is installing a local fiber cable network to provide access service to long distance telephone, data, voice and video communication systems. Cox Cable of Oklahoma City announced last year that it was developing Cox Fibernet in conjunction with Teleport Communications Group Inc.

Brooks Fiber Communications, like Cox Fibernet, will concentrate primarily upon the business user of high-speed, high-density integrated communication services.

"I believe there's definitely enough demand in this segment to

support two or more networks like this," Hugman said. "After all, competition is good for the consumer.

"We've already noticed that since we've announced our presence that things have changed, that other companies are providing more competitive service and rates."

A fiber cable network does more than just provide convenient high-speed transmission for businesses clients, he said. "It's also good for the economic development of the city."

Other high-technology and communications-sensitive companies are drawn to an area which has cable networks like this, he said.

"Companies, especially high-tech companies, realize the importance of a communications network like this and will not consider going into a community unless this type of system is in operation," he said.

When the Oklahoma City office was opened earlier this year, it was the second venture Brooks Fiber Properties had made into Oklahoma. This week, it closed the purchase of a 105-mile competitive access network in Tulsa.

Cost of that purchase was not disclosed, but the company has spent \$3 million upgrading the MetroLink system it bought from Public Service Co. of Oklahoma.

That link not only serves downtown Tulsa, but many of the suburban business parks as well.

By the time the Oklahoma City network is fully installed within 10 years, the company will have invested nearly \$20 million here, Hugman said.

A fiber cable network also offers a degree of security for clients, he said.

"We have a disaster avoidance system where if the cable is cut or interrupted in any way, the digital signal is automatically rerouted to a complete circuit," he said. "That way, our clients don't have to worry about their communications going through."

The central hub also has a battery power back-up system in case electricity is lost.

"We're also tied into our network in St. Louis so they can monitor what we're doing here," he said. "They have maintenance people constantly monitoring all our systems 24 hours per day, and if something goes wrong, they can spot it and alert the local people immediately. That's a lot faster and safer than if we relied upon the local system alone."

Hugman did not disclose the number of buildings his network has wired with fiber cable, nor how many clients it has.

While the company now is concentrating upon providing competitive access networks in Tulsa and Oklahoma City, services will be expanded to cover the whole state.

"We're not just concentrating on the two most highly populated areas of the state," Hugman said. "We want to be a part of Oklahoma and serve the entire state."

Brooks Fiber Communications also is waiting for deregulation of the local telephone industry so that it can enter that market.

"There's no way that I would hazard a guess as to when that will be," Hugman said. "But there are legislative efforts on the state and national levels, and the Oklahoma Corporation Commission _ which regulates these types of service _ is considering an application to allow competition to the local telephone company right now."

Competition for the local telephone service, combined with cable, is what lured Robert Brooks, the company's chairman, into this type of business in the first place.

Brooks, a cable television pioneer, started Cencom Cable Associates in 1982 and sold it to Crown Media 10 years later for \$1 billion.

From there, Brooks started Brooks Telecommunications Co., which is involved in a joint venture to provide telephone service in China. Brooks Fiber Properties became a subsidiary, and later Brooks Fiber Communications was formed to provide competition to the local telephone exchange company.

Until deregulation, when the company can compete with both cable and telephone companies, it is concentrating on second- and third-tier metropolitan areas which meet its economic and demographic criteria.

It also has networks in Hartford, Conn.; Providence, R.I.; Springfield, Mass.; Knoxville, Tenn.; Little Rock, Ark., and Sacramento and San Jose, Calif.



Southwestern Bell
Telephone

WHEELER SCHEDULE 2

3 of 32

BROOKS 4

News Media Report

THE JOURNAL RECORD

Oklahoma City

3-27-95

Firm Turns On New Fiber Optic Network for OKC

By Bill May

Journal Record Staff Reporter

Another link in Oklahoma City's telecommunications infrastructure was turned on officially Thursday when Christopher Hugman flipped a switch to start Brooks Fiber Communications of Oklahoma Inc.

The communications company, a subsidiary of Brooks Fiber Properties Inc. of St. Louis, has installed a fiber optic cable network around the downtown area to link local businesses to long distance telecommunications carriers.

Hugman, general manager of the Oklahoma company, turned on the switch shortly before he was officially welcomed to town by Lt. Gov. Mary Fallin, City Council Member Beverly Hodges and Charles Van Rysseberge, president of the Oklahoma City Chamber of Commerce.

During the brief ceremony, Hugman noted that the company last week acquired a similar but larger network in Tulsa. This gives the company networks in nine medium-size cities throughout the United States.

Although the network will not be completed for years, the company has invested \$3 million to install the downtown link and plans a \$20 million expansion over the next 10 years, Hugman said.

This makes the second fiber optic network installed in the downtown area to provide access services to long-dis-

tance carriers. Cox Fibernet, a joint operation between Cox Cable of Oklahoma City and Teleport Communications Group Inc., was installed last year.

Infrastructure of this type is attractive to companies seeking a start-up or relocation site, Hugman said.

"The governor recently said that he'd like to have some more arrows in his quiver for economic development projects," Hugman. "We hope that he will see this fiber optic network as another of those arrows he needs to bring in quality, high-tech companies."

Not only is a fiber optic telecommunications system a plus in industrial recruiting, but such a system plays an integral role in the chamber's five-year plan — expected to be released in May — and the Central Oklahoma 2020 plan, Van Rysseberge said.

"For our infrastructure of the future, this type of system is very, very important," he said. "Both the five-year plan and the 2020 plan have identified high-tech telecommunications as a main focus. Oklahoma City knows how important a connection to the Information Superhighway is."

Fallin thanked Brooks Fiber Proper-

ties for expanding into Oklahoma with a network that not only helps economic expansion but also supports government.

Besides providing access to long-distance telecommunications carriers, the network also will support the reservations centers and telemarketing centers attracted to Oklahoma City, said John C. Shapleigh, Brooks Fiber Properties executive vice president.

"These are the smokestack types of industries that are good for economic development," he said.

"We will promise excellence in service to our customers and an excellence in service to the city and state with this network, which will benefit both existing companies and new industry attracted here."

While the company's first ventures into Oklahoma are to provide access service to long-distance telecommunications carriers, it ultimately hopes to compete with local telephone companies, Brooks said.

"As of right now, we can't deliver the dial tone to any of our customers," he said. "But I understand the Oklahoma Corporation Commission has before it now a provision which would allow us to compete against local telephone companies."

It was the local telephone and cable provider portion of the industry which is credited with creation of Brooks Fiber Properties Inc.

Chairman and chief executive officer is Robert Brooks, a cable company pioneer, who founded, developed and operated a cable company, then sold it 10 years later for \$1 billion. That money provided capital for the new company.

Brooks Fiber Properties also has networks in Hartford, Conn.; Providence, R.I.; Springfield, Mass.; Knoxville, Tenn.; Little Rock, Ark.; and Sacramento and San Jose, Calif.

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EF0046

News Media Report

PUBLICATION SECTION The Daily Oklahoman

LOCATION _____

PAGES: 19 Date/Time 8/29/96

Comments p. 1 of 2

Local Phone Competition Due Soon

By Bob Vandewater
Staff Writer

Subsidiaries of Brooks Fiber Properties Inc. are expected to begin competing with Southwestern Bell Telephone for local phone services in Oklahoma City and Tulsa by the end of this year, officials said Wednesday.

That forecast followed state Corporation Commission approval Wednesday granting Brooks Fiber Communications of Oklahoma City Inc. and Brooks Fiber Communications of Tulsa Inc. authority to offer phone service in those areas.

The Brooks companies and Southwestern Bell have been trying to agree on terms of several competitive issues.

"We're currently in negotiations, but we're expecting to reach something real soon," Wade

Sandrell, corporate communications director for St. Louis-based Brooks Fiber Properties, said Wednesday.

The company has built a network in both cities with some services already provided to business customers, Sandrell said.

"We've been operating for some time, providing a small part of our service in terms of high band width capacity type services, data services, etc. We just have not been able to become the new local telephone company," he said.

But the Brooks companies applied to the commission in April for approval to begin offering full dial tone and other services to residential and business phone users.

"What this has done is
See SERVICE, Page 20



Southwestern Bell
Telephone

News Media Report

Publication Name The Daily Oklahoman

Location _____

Page(s) 19 Date/Time 8/29/96

Comments P. 2 of 2

Service

From Page 19

sically is it has allowed us to become the new local telephone company," Sandrell said.

"And we'll be providing services, local dial tone services, so basically consumers in both the Oklahoma City area and the Tulsa area will now have a choice besides Southwestern Bell. ... It's going to happen before year-end," he said.

AT&T in May became the first company to win corporation commission approval to offer local exchange telecommunications

"It has allowed us to become the new local telephone company."

— Wade Sandrell, Brooks Fiber Properties

in competition with Bell and GTE.

But AT&T has since asked the commission to arbitrate key issues between it, Bell and GTE to prepare for serving Oklahoma local service markets. AT&T officials project it will not start competition until 1997.

So Brooks seems poised to leap-frog ahead of AT&T as the first alternative local exchange services provider competing against Bell in Okla-

homa, officials said.

Brooks Fiber President D. Craig Young said that Brooks "will be the first full-service competitive telecommunications provider to go on-line in Oklahoma City and Tulsa, offering the first real choice against the incumbent monopoly

phone company."

Sandrell said, "Basically what we're going to be able to do is provide comparable or better services than what Southwestern Bell is currently doing ... and savings. ... We know good and well the customer's going have to be happy and we're going to have to provide excellent customer service."

Southwestern Bell declined to comment. Brooks, which is in-

stalling its own switching equipment to handle calls in Oklahoma City and Tulsa, said it "will offer businesses a full array of telecommunications services which can be used to supplement or bypass services offered by Southwestern Bell."

Brooks Fiber has 29 networks in 16 states operating or under construction and plans to have 30 by the end of 1996.



Southwestern Bell 5 of 32
Telephone

WHEELER SCHEDULE 2

Brooks 8

News Media Report

Publication/Station The Daily Oklahoman

Location OKC

Pages: 18 Date/Time 12/5/96

Comments _____

Company Plans Local Telephone Service in '97

By Bob Vandewater
Staff Writer

Brooks Fiber Properties Inc. expects to begin offering local exchange telephone services in competition with Southwestern Bell early in 1997 in the Oklahoma City and Tulsa areas, an official said Wednesday.

Waymon Tipton, senior vice president for St. Louis-based Brooks, said that the Oklahoma Corporation Commission already has approved the firm's certification to operate in those markets and approved Brooks' interconnection agreement with Southwestern Bell.

In the Oklahoma City area, the competing service will be offered by Brooks Fiber Communications of Oklahoma Inc. In Tulsa, the service will come from Brooks Fiber Communications of Tulsa Inc.

Both are wholly owned subsidiaries of Brooks Fiber Properties.

"Brooks and Southwestern Bell networks

will interconnect for terminating local calls to one another at mutual and reciprocal rates," the agreement states.

Tipton said that Brooks "is in testing now, and we are very close" to offering competing local phone services in the Oklahoma City and Tulsa areas:

Customers who sign up for local service with Brooks will be able to keep their existing phone numbers, officials said.

"Our first thrust is to get market share in those metropolitan areas," Tipton said. "Once we develop market share and presence, then we basically will go where we see demand."

The Federal Telecommunications Act of 1996 and corporation commission rules established early this year encourage development of competition in providing local exchange telephone services. Several companies have indicated such plans.

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Publication Station The Journal Record

Location CLC

Pagers _____ Date/Time 12/6/94

Comments 0 2 2

Competing for communications buck



Photo by Ma

COMING IN AND GOING OUT: Scott Pulliam, network manager with Brooks Fiber Communications, opens an OC-3 unit. Fiber optic cables come into their central office connecting with every major phone carrier.

Fiber optic #2

*AT&T
Equipment*

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OR DISCLOSED OUTSIDE

Publication/Station: The Journal Record

Location: OKC

Page(s): 1 Date/Time: 11/26/96

Comments: 2.2 of 2

By RICHARD BEDARD

This past February, Congress did what it had not done since 1936 – a year when Franklin Roosevelt was president, Oklahoma was in the grip of the arid Dust Bowl era, and the TV set had not yet made its widespread appearance in America's living rooms.

By a huge margin in both the Senate and the House, it passed a 111-page, far-reaching Telecommunications Act. The new law drew immediate attention for a decency provision: part of the standard hardware of new television sets will be a "V-chip" to screen out raunchy and violent program content.

But the greatest impact of the Telecommunications Act will not be kinder, gentler images flickering on the tube. Rather, it's a pocketbook issue. The act knocked down regulatory barriers and opened up new arenas of competition. Once protected monopolies have been knocked off their perches.

Related articles on Pages 8-11

Cable companies, and others, providing complete telephone service, and competing with Southwestern Bell? Look for it soon.

Cox Fibernet, a subsidiary of Cox Communications, will be ready with a full package of phone service in Oklahoma City as early as the first quarter of 1997, said General Manager Jeff Storey. In preparation, the company is laying down 325 additional miles of fiber optic cable, as well as installing a phone system switching device.

One competitive edge that Cox possesses, Storey remarked, is the most extensive fiber optic network in the capital. "There's not a business or residence in Oklahoma City that's more than half a mile away from our fiber," he said.

But Brooks Fiber Communications in all likelihood will beat Cox into the market. In mid-December it expects to begin offering regular public telephone service in Oklahoma City. "We're at the line of scrimmage

and ready to snap the ball," said General Manager Christopher Hugman.

How the telecommunications service company, based in St. Louis, poised to enter this potentially lucrative segment, the industry provides an instructive case study.

Just a few weeks ago, Brooks Fiber sold \$225 million in senior discount notes. Part of the sum, Hugman said, will finance the move into providing what they familiarly call "pots," or "plain old telephone service."

In Oklahoma, the company will first reach out to businesses in Tulsa and Oklahoma City, two of the 30 medium-size cities, across the nation, where it has fiber optic networks set up. So far, Brooks Fiber has built its business in the data service market, commonly with point-to-point private lines that send data cross-town, between buildings within a city.

To lure clients for this new venture

See BUCKS, Page 9

BUCKS

Continued from Page 1

Brooks Fiber plans to undercut Southwestern Bell rates, as well as offer a wider selection of phone services.

At every opportunity, salespeople will push the benefits of fiber optics over Southwestern Bell's traditional copper phone lines. One quality they crow about is a "self-healing" feature: if a construction crew accidentally slices through fiber optic cable, the light signal is often redirected, with no pause in service. And fiber optics, unlike copper, has "massive transmission capabilities."

From a consumer's standpoint, in several critical ways any changeover would be smooth. The telephone number remains the same. And Brooks Fiber has contracted to use Southwestern Bell's operator services, as well as have customers listed in its phone directory.

Getting all the way from the passage of the Telecommunications Act to becoming a local phone ser-

vice provider has not been easy.

Brooks Fiber had to lay more miles of cable and install the large, costly devices known as switches, which among other things route calls and generate dial tones. Since Southwestern Bell controls key sections of phone line, officials from the two companies had to sign interconnection agreements. The Oklahoma Corporation Commission also had to certify the fiber company's rates, which are now on file, Hugman said.

A number of Oklahoma City customers have already signed up, but Hugman declined to reveal how many.

In the long run, Brooks Fiber hopes to persevere by not making the mistake of becoming all things to all people, despite the freedom suddenly handed out by the Telecommunications Act. The company has its sights set firmly on the business community, and its needs.

"We're not going to rush out and be a cable TV provider," Hugman said. "I don't see a need for businesses to have a lot of cable TV."

Richard Bedard is a correspondent for *The Journal Record*.

News Media Report

LOCATION: OKLAHOMA CITY
DATE: 11/29/95
TIME: 1:00 PM
BY: JOHN J. HARRIS
FOR: OKLAHOMA CITY

Brooks 9

Brooks Fiber receives approval to offer local telephone service

By JESSICA DANKER
Journal Record Staff Reporter

Brooks Fiber Properties Inc. expects to become the first local telephone service competitor of Southwestern Bell Telephone Co. in Oklahoma.

The company Wednesday received approval from the Oklahoma Corporation Commission to provide a full-range of local exchange telecommunications services.

St. Louis-based Brooks Fiber is the second company to receive the local exchange carrier status in the state since the passage of the Telecommunications Act of 1996 in February.

AT&T, which has received the authority to compete in the local exchange market, is currently in the arbitration process at the commission regarding some details of its interconnection agreements with Southwestern Bell.

Brooks Fiber expects to reach an agreement with Southwestern Bell regarding their interconnection agreements in as soon as a week, according to Wade Sandrell, director of Corporate Communications for Brooks Fiber Properties.

Brooks Fiber expects to be providing local phone service in the Tulsa area by November and in Oklahoma City by December, Sandrell said.

"Our focus will be on business (customers), however we will also be looking at the residential market as well," he said.

Brooks Fiber currently has 29 networks in 16 states operating or under construction and plans to have 30 networks by the end of 1996 and 50 by the end of 1998.

Oklahoma will be the fourth state in which Brooks Fiber is a provider of local exchange service.

Brooks Fiber currently provides high bandwidth video, data and voice services in Oklahoma City and Tulsa through its wholly owned subsidiaries Brooks Fiber Communications of Oklahoma City Inc. and Brooks Fiber Communications of Tulsa Inc.

"This authority allows Brooks Fiber to expand its local offerings to include full dial tone services."

Brooks Fiber plans to offer businesses a full array of telecommunications services:

- Local Phone Service - (dial tone).
- Connections between businesses and their long distance carriers.
- Connections between a company's computer networks in different locations.
- Centrex business phone systems - for customers who don't want to purchase and maintain private branch exchange and key system equipment or who just want to enhance their current service.
- Videoconferencing, distance learning and telemedicine applications.
- High speed data transmission and high speed lines to Internet service providers.
- "800" and "900" numbers

BROOKS FIBER. THE PHONE COMPANY WITH SERVICE LIKE YOU'VE NEVER HAD BEFORE.



Yes! It's here. Brooks Fiber can deliver communications service like you've never had before. We are your gateway to a new era of voice and data solutions.

Will our service lower your costs? Absolutely. But this benefit is only the beginning.

When we visit you, you'll hear about communication solutions once reserved for only the largest companies. We'll address the communications you now have and immediate

solutions to the communications frustrations you have been coping with for years.

Call us today to find out if the future has reached your area and to schedule a brief appointment. To discover just how responsive we can be, give us a list of the communications problems you'd like us to solve. By delivering service like you've never had before, we'll demonstrate we are the phone company you've always wanted.



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Brooks Fiber Communications

216 Park Avenue, Suite 2250 • Oklahoma City, OK 73102 • 405-232-3427 • Fax: 405-236-2737

Internet: <http://www.Brooks.net>

Local Phone Competition Just Budding

By Bob Vandewater
 Staff Writer

Competition in the regular local phone service business is trying to sprout in Oklahoma, but it appears it'll be awhile before widespread service reaches full bloom even in larger cities.

Units of St. Louis-based Brooks Fiber Communications, however, have begun providing local phone service in parts of the Oklahoma City and Tulsa metropolitan areas, Senior Vice President Waymon Tipton said Wednesday.

Tipton said he believed Brooks was the first company to compete for regular local service with Southwestern Bell Telephone in those areas.

Local competition was one of the goals of the federal Telecommunications Act of 1996. Saturday will mark a full year since President Clinton signed the act into law.

That act encouraged local and long-distance telecommunications companies to compete in each other's business sectors in order to provide consumers with more choices.

After their spinoff from AT&T more than a dozen years ago, Southwestern Bell Telephone and the other Baby Bells were barred from some long-distance markets.

But the telecommunications act also provided ways for a local Bell company in a state to expand into wider long-distance services once its local market in that state was opened to competition.

To serve customers, a prospective local exchange competitor that wanted to resell services could reach an interconnection and resale agreement with the existing local phone utility through negotiation or arbitration.

Through January in Oklahoma, Southwestern Bell had negotiated and signed 11 agreements with firms that plan to be competitive service providers, and it is still negotiating with 23 others, Bell officials said Wednesday.

Signed agreements include deals with Brooks Fiber Communications, U.S. Long Distance, Western Oklahoma Long Distance, ICG Telecommunications, Oklahoma Communications, and Western Wireless Inc. in Oklahoma City.

"We have been negotiating and reaching agreements at a brisk pace with companies that want to enter the local service market," said Dave Lopez, president of Southwestern Bell's Oklahoma division.

After arbitration, the Oklahoma Corporation Commission in December. See ENR 2/12/97, Page 22.

Phone

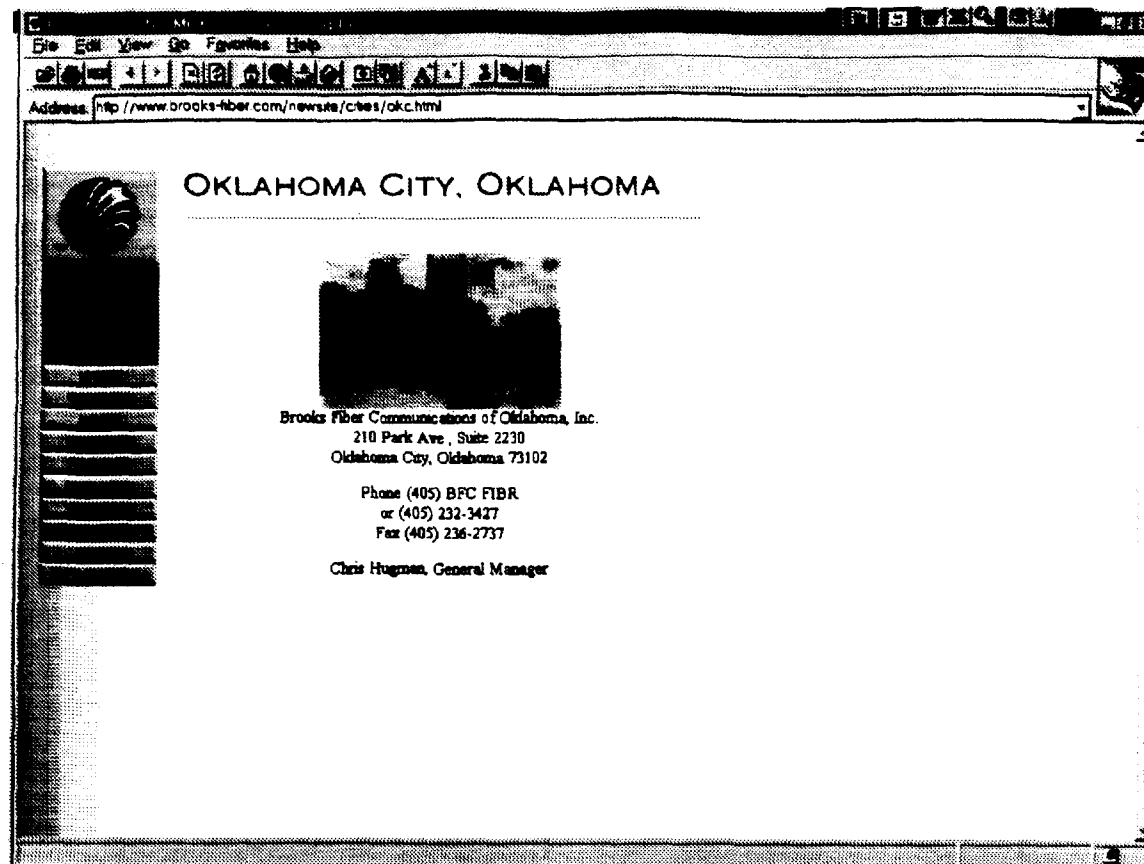
From Page 16

ber also decided how to settle disputed issues in AT&T's effort to reach an interconnection and resale agreement with Southwestern Bell.

Tipton said although Brooks has begun providing local service in Oklahoma City and Tulsa, it has

not launched a major marketing effort yet.

"We'll certainly do marketing more toward business. ... It's a balancing act. ... We don't want to go out and market and be overwhelmed as far as having customers that we can't hook up," he said.



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Cox To Offer 'Full Service' Network

By Carol Wilson

The "full service" network is back. Cox Communications Inc. plans to build a cable network in Oklahoma City that will deliver telephone, digital video and Internet data services to homes next year.

The network will use equipment from Ericsson Inc., and the services will first be delivered to 50 Cox employees in March 1997. If that technical trial is successful, commercial service could start as early as third quarter 1997, said Mark Davis, director of engineering, telephone operations, for Cox.

Few cable companies have followed in the footsteps of Time Warner Inc., which has been developing a Full Service Network in Orlando, Fla., that delivers video, data and voice services on demand. Most major cable operators of late have focused instead on developing Internet and data access services, with less emphasis on telephony. Where cable companies are testing telephone service over their Hybrid Fiber-Coaxial, or HFC, cable networks, the delivery mechanism is a separate function from video programming and data access.

Davis said, however, that Cox has long wanted to use a unified approach to delivering all its interactive digital services.

Combining the services on the same network is cost-efficient, said Davis. "We'll put in stand-alone devices to meet market demand for data access or other services," he said. "But if you look at telephony or data or digital video — all of these devices have modulators: they all have power supplies; they all have control logic. If we integrate those into one box, resources can be shared and we gain efficiencies. The purpose of this technical trial is to see where it makes sense to do that."

The multiple services network in Oklahoma City uses Asynchronous Transfer Mode, or ATM, technology from Ericsson. The trial takes place over a network that has largely been upgraded to a 750-megahertz system, with fiber-optic cable reaching nodes of about 1,000 homes, said Davis.

The 500 Cox employees are scattered about, giving the company a good idea of how a widespread service will work. Cox also hopes to answer a few remaining technical questions, such as whether transporting signals by ATM technology is more efficient than using Motion Picture Experts Group, or MPEG, II compression technology.

Regular broadcast analog cable service will remain separate from the

services that Cox will offer with its partner, Sprint Spectrum, will not be integrated into this network.

But working with a sister company, Cox Fibernet, the cable operation will be able to offer telecommuting services to Oklahoma City residents. Cox Fibernet has a fiber network that already covers the business community. "We haven't had formal discussions

with businesses yet," said Davis. "But we see that as a major opportunity."

Ericsson will provide the ATM switch technology, ATM multiplexing equipment that will be used at the cable head-end and a network interface unit that will be installed on the side of the customer's home and will include both cable modem functionality and basic telephony service. ▲

TCI Sets Telephony Plans

By Carol Wilson

Tele-Communications Inc. and Sprint Communications Co. plan to offer local telephone services in Connecticut, Illinois and California by the fourth quarter.

Greg Crosby, vice president of marketing for TCI's Telephone Services Business unit, said the two companies are forming a separate joint venture to manage delivery of wireline telephony, and that venture will develop a voice service package that includes Sprint long-distance service.

The venture will use TCI hybrid fiber-cable networks and switching facilities from Teleport Communications Group. The joint venture will also bundle services from other TCI ventures, including the Primestar Partners direct broadcast satellite operation and @home, the data access service.

The new venture, which is not yet named, will operate separately from Sprint Spectrum, the wireless venture of Sprint, TCI, Comcast

Corp. and Cox Communications.

TCI is testing voice services over its HFC network in Hartford, Conn., and Arlington Heights, Ill. Crosby said those trials have 25 and 15 customers in service, respectively, and will each add 50 more to enter phase one of a technical trial this spring. By summer, the partners will enter phase two, which involves testing billing systems, customer service and other back-office functions.

"We will go live in Arlington Heights by the third quarter, then roll out the service in other areas by the end of the year," said Crosby. "It is an aggressive schedule, but we think it's important as the market becomes competitive, to get into service quickly."

In addition to the Chicago area, where TCI has a heavy franchise concentration, and Connecticut, other obvious early service areas include the Bay Area in California, where TCI's acquisition of Viacom gives it strong coverage. ▲

The venture will use TCI hybrid fiber-cable networks and switching facilities from Teleport

Standard For E-Cash Due

By Paul Nogiowski
and Will Rodger

Two Internet industry groups plan to collaborate on standard payment mechanisms for the World Wide Web.

The groups, CommerceNet of Menlo Park, Calif., and the World Wide Web Consortium of Cambridge, Mass., said their Joint Electronic Payments Initiative, or JEPI, will produce a prototype for demonstration by September.

The product will then be available for software developers to use, assuring compatibility among different payment schemes, including

"Different payment systems have been the central barrier to electronic commerce really taking off," said Tom Wills, senior program manager for CommerceNet and co-chair of JEPI. "But as much as we would all like to see a single payment solution for Web commerce, we know the reality is that there are going to be several."

Members of the initiative include producers of rival payment systems, such as CyberCash Inc., First Virtual Holdings Inc., Microsoft Corp. and Open Market Inc. Others include Bellcore, Citibank, CUC International, Deloitte &

NOISE



▼ revenue will be about \$74 million this year and \$2 billion in 2000, Yahoo! says in its prospectus. Yet Yahoo!'s market value on its first day of trading hit \$1 billion. That's about 50 percent of the entire market five years from now. Hard to believe any one ad-supported service will gain that kind of share of market. Does anybody read red herrings? ... In case you missed it, U.S. District Judge Harold Greene's 14-year reign over the fate of the seven regional Bell operating companies ended April 12 — but not without a parting shot from the feisty arbiter. Greene did not give millions of pages of documents relating to the breakup of the old American Telephone and Telegraph Co. to the Bell companies, which wanted the sensitive information back. Instead, he gave them to the Federal Communications Commission. During negotiations early this year to create Secure Electronic Transactions as a single standard for secure Internet credit card transactions, Visa and MasterCard insisted on what cryptologists at the table considered overkill in protecting card numbers. "We don't want to be Markoffed," they explained. The term refers to *New York Times* reporter John Markoff, who has written several front page stories on Internet security breaches that some cryptographers think were overblown. ... Got some noise to unload? Dump it at

Telephony

CI Merges Telephony Divisions

Jerry Gaines to run newly created unit; Cox maps telephony rollout 1

BY VINCE VITTORE

TCI Telephony Services will merge with the microwave network division of WTCI Jan. 1 to create a new division that Jerry Gaines, the president-CEO of TCI Telephony, will run.

WTCI's microwave division is focused on selling wholesale services to long-distance operators in the Northwest. TCI Telephony, which launched residential service in Hartford, Conn., in November, previously has said it'll open its network to local resellers.

Tele-Communications Inc. has hinted that it'll spin off its telephony division into a separate tracking stock.

COX'S GAME PLAN: Cox Communications Inc. already has installed the first three switches it will use to roll out telephony services, according to David Woodrow, the MSO's senior VP-broadband services.

Cox, which recently signed a \$65-million technology deal with Nortel, said it could have 2 million homes "telephony-ready" in 1997 and 3 million by the end of 1998.

Initial deployment will begin in apartments and condominiums in Southern California; single-family service will begin soon after. Business services such as centerex will be offered first in Hampton Roads, Va., and Oklahoma City. New Orleans will be added some time next year.

Cox, which has won certification to deliver local exchange service in Nebraska, Louisiana, Virginia and California, has filed applications in several other states, as well. The company also has signed interconnection deals with Pacific Bell and Bell Atlantic and is in arbitration proceedings with US West.

Woodrow says his company can create a profitable business by discounting telcos' current prices 14% and capturing 9% of the market. "If we're able to price this close to parity, we think we can have a very good business," he said.

Beyond residential users, Cox also will try to move into the business market, where users typically pay two times the residential rate.

"The small to medium market is a wonderful market for us," Woodrow says. "We can go in and offer them the same services for basically half the price, it makes a lot of sense."

The MSO is trying to avoid rolling out service too fast and not being able to handle requests from an operational stand-

point. Instead, Cox will launch to small groups of 10,000 to 20,000 prospective customers at a time.

"We're going to be very smart in how we roll this out," Woodrow says. "Rather than getting 1% over the whole network and reacting to where they're coming from. I'd rather get 3% or 4% by concentrating on specific areas."



PRODUCT SHIPPING: Arris Interactive, the Nortel-Antec venture, says it has shipped 19,000 two-line voice ports and more than 200 host digital terminals to cable operators in the last year. About half of that equipment is in operator hands; the rest is being sent to distributors.

"I'm beginning to see the momentum rise as we begin to deploy the product," says Arris president Bob Stanzione.

The Cornerstone product is now installed on systems that pass about 100,000 homes, according to Arris. On tap for the next year: a software upgrade that'll increase the product's capacity by five times.

Arris also is marketing a new feature that it says will let cable operators supply data service in 64-kbps chunks for almost no additional investment.

"We're not positioning this as a high-speed data product, but it's getting a lot of interest from people with work at home applications," says Michael Pritz, VP-marketing/product development in Antec's digital systems division.

TWO LINE REMOTE: Tellabs has introduced a two-line remote service unit (RSU) for its Cablesan telephony system and plans to have a 12-line model available next year.

The company also is developing an add/drop multiplexer for the cable industry that'll look something like a small version of its Titan digital cross-connect system.

"What we're doing with the Titan line is sort of growing it in both directions at the same time," says a Tellabs spokesman.

The two-line RSU is designed for cable operators going after the residential telephony market. In previous versions of Cablesan, MSOs only had a single-line RSU or had to make the jump to 48-line version.

BRAGGING RIGHTS: Since its move into the cable billing former management market:

Western Show, CBIS says it has captured about one-third of the market. CBIS says it now provides billing to cable systems serving 2.1 million subscribers. Among the MSOs the vendor has signed this year: Cox, TeleWest Communications PLC, Suburban Cable, Time Warner Cable and TCI Telephony Services.

MODULATION EQUIPMENT: ADC continues to promote its OFDM technology as the preferred cable telephony modulation scheme.

One key benefit the company was promoting at the Dec. 10-13 Western Show: the technology's ability to reduce latency delays to around 2 milliseconds. That eliminates the need for echo-canceling devices that other vendors must use, according to Greg Hutterer, program manager in ADC's broadband communications division.

Several companies, however, dispute those claims.

Motorola, which uses QPSK in its CableComm system, says echo cancellation is employed, but makes the system more reliable. "It's really never been an issue with us," says Ron Smith, VP-operations at Motorola Multimedia.

Motorola is working with four U.S. MSOs, but probably won't announce any significant deployments until mid-1997, according to Jim Phillips, VP-GM of Motorola Multimedia. Instead, the company expects more announcements to come from international operators, particularly in Asia.

Key to the U.S. market opening up will be the release in January of the TR-303 specification that'll let cable telephony vendors interconnect their systems to other manufacturers' switches. Currently, vendors must use an older standard (TR-008) that isn't as economical.

What's more, U.S. operators are spending most of the resources defending their core cable turf, rolling out modems and working out the regulatory issues of telephony.

"You have to ask how much internal capacity does the MSO have now with data and digital," Phillips notes. "That's a gating factor now that's real."

SNET ADOPTS x2: Southern New England Telephone plans to install U.S. Robotics x2 technology through its network, which it says will let it offer Internet access at up to 56 kbps over copper lines. ■